

DOE Dedicates Argonne Leadership Computing Facility

ARGONNE, Ill. (April 21, 2008) – The U.S. Department of Energy's (DOE) Argonne National Laboratory today celebrated the dedication of the Argonne Leadership Computing Facility (ALCF) during a ceremony attended by key federal, state and local officials.

The ALCF is a leadership-class computing facility that enables the research and development community to make innovative and high-impact science and engineering breakthroughs. Through the ALCF, researchers conduct computationally intensive projects on the largest possible scale. Argonne operates the ALCF for the DOE Office of Science as part of the larger DOE Leadership Computing Facility strategy. DOE leads the world in providing the most capable civilian supercomputers for science.

"I am delighted to see this realization of our vision to bring the power of the Department's high performance computing to open scientific research," said DOE Under Secretary for Science Dr. Raymond L. Orbach. "This facility will not only strengthen our scientific capability but also advance the competitiveness of the region and our nation. The early results span the gamut from astrophysics to Parkinson's research, and are exciting examples of what's to come."

Dr. Orbach, Dr. Patricia Dehmer, DOE Office of Science Deputy Director for Science Programs, and Dr. Michael Strayer, DOE Associate Director of Science for Advanced Scientific Computing Research, attended the ALCF dedication, along with Congresswoman Judy Biggert.



Argonne Leadership Computing Facility Dedication, April 21, 2008

DOE makes the computing power of the ALCF available to a highly select group of researchers at publicly and privately held research organizations, universities and industrial concerns in the United States and overseas. Major ALCF projects are chosen by DOE through a competitive peer review program known as Innovative and Novel Computational Impact on Theory and Experiment (INCITE).

Earlier this year, DOE announced that 20 INCITE projects were awarded 111 million hours of computing time at the ALCF. The diverse array of awards includes projects led by Igor Tsigelny, San Diego Supercomputer Center, UC San Diego, to model the molecular basis of Parkinson's disease; William Tang, Princeton Plasma Physics Laboratory, to conduct high-resolution global simulations of plasma microturbulence; and Jeffrey Fox, Gene Network Sciences, to simulate potentially dangerous rhythm disorders of the heart that will provide greater insight into these disorders and ideas for prevention and treatment. Academic institutions,

including the University of Chicago, UC Davis and Northwestern University, and large public companies such as Proctor & Gamble and Pratt & Whitney, also received computing time at the ALCF through INCITE.

Argonne has been a leading force in high-performance computers. Two years prior to the establishment of the ALCF in 2006, Argonne and Lawrence Livermore National Laboratory began working closely with IBM to develop a series of computing systems based on IBM's Blue Gene platform. Argonne and IBM jointly sponsor the international Blue Gene Consortium to share expertise and software for the IBM Blue Gene family of computers.

Since 2005, Argonne has taken delivery of a Blue Gene/L and Blue Gene/P that have a combined performance capability of 556 teraflops per second. Key strengths include a low-power system-on-a-chip architecture that dramatically improves reliability and power efficiency. The Blue Gene systems also feature a scalable communications fabric that enables science applications to spend more time computing and less time moving

data between CPUs. Together with DOE's other Leadership Computing Facility at Oak Ridge National Laboratory, which has deployed a large Cray supercomputer, computational scientists have platforms that provide capabilities for breakthrough science.

"The ALCF has tremendous computing ability, making it one of the country's preeminent computing facilities," said Argonne Director Robert Rosner. "The research results generated by the ALCF will be used to develop technologies beneficial to the U.S. economy and address issues that range from the environment and clean and efficient energy to climate change and healthcare."

DOE selected a team composed of Argonne, PNNL and ORNL in 2004 to develop the DOE Office of Science (SC) Leadership Computing Facilities after a competitive peer review of four proposals. PNNL operates the Molecular Science Computing Facility, and LBNL runs the National Energy Research Science Computing Center. DOE SC's computational capabilities are expected to quadruple the current INCITE award allocations to nearly a billion processor hours in 2009.

About Argonne

Argonne National Laboratory brings the world's brightest scientists and engineers together to find exciting and creative new solutions to pressing national problems in science and technology. The nation's first national laboratory, Argonne conducts leading-edge basic and applied scientific research in virtually every scientific discipline. Argonne researchers work closely with researchers from hundreds of companies, universities, and federal, state and municipal agencies to help them solve their specific problems, advance America's scientific leadership and prepare the nation for a better future. With employees from more than 60 nations, Argonne is managed by UChicago Argonne, LLC for the U.S. Department of Energy's Office of Science.

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